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1 UNITED STATES DISTRICT COURT  
2 SOUTHERN DISTRICT OF NEW YORK

3 UNITED STATES OF AMERICA,

New York, N.Y.

4 v.

15 Cr. 153 (VSB)

5 DEAN JONES,

6 a/k/a "Korrupt,"

Hearing

7 Defendant.  
8 -----x

9  
10 November 16, 2017  
10:40 a.m.

11 Before:

12 HON. VERNON S. BRODERICK,

13 District Judge  
14  
15

16 APPEARANCES  
17

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Acting United States Attorney for  
the Southern District of New York

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(Hearing resumed)

THE COURT: We are ready to proceed?

MR. ROSANIA: Yes, your Honor.

THE COURT: Call your next witness.

MR. ROSANIA: The defense calls Nathan Adams.

NATHANIEL D. ADAMS,

called as a witness by the Defendant,

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. ROSANIA:

Q. Good morning, Mr. Adams.

A. Good morning.

Q. Could you please describe your educational background.

A. I have a bachelor's in science in computer science from Wright State University, and I am currently in the process of earning my master's degree in computer science from Wright State as well.

Q. Let's talk about your undergraduate studies at Wright State.

You say you have a bachelor's of science in computer science, correct?

A. Yes.

Q. Was there a specialization that you did while conducting your undergraduate studies?

A. I did a specialization, which is kind of like a focus, in

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1 the bioinformatic track.

2 Q. Did that require additional course work at Wright State  
3 University?

4 A. There were a number of additional courses that I took that  
5 are not part of a standard computer science curriculum.

6 Q. And were they requirements for that specialization?

7 A. Yes.

8 Q. What were some of those courses?

9 A. A couple of the more important ones, and what I believe are  
10 relevant today, are courses in genetics and bioinformatics,  
11 specifically.

12 Q. What is bioinformatics?

13 A. It is the marriage of computing, computer science and  
14 biology, which are traditionally not very overlapping fields or  
15 disciplines. It is to acquaint biologists with competing  
16 theory and capabilities of what problems can be solved with  
17 different tools of computing as well as acquainting computer  
18 scientists with the models, concepts, vocabulary, rules,  
19 constraints of biological systems.

20 Q. What other courses were required for the bioinformatics  
21 specialization at Wright State?

22 A. Honestly, I don't recall what was required as opposed to  
23 what I took. I have taken a number of courses in biology or  
24 chemistry that -- I don't have the criteria for that  
25 specialization in front of me, but I have taken courses in

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1 biochemistry, anatomy and physiology, lab chemistry, as well,  
2 microbiology, a number of different courses.

3 Q. Did you take any courses where you had any data  
4 analyzation?

5 A. Yes. That's a major focus of the types of electives that I  
6 took for my computer science undergraduate degree, as well as  
7 my graduate studies has been on kind of the analytic side of  
8 computing. That might be as opposed to other disciplines that  
9 are more about the applied math computability and complexity.  
10 There is a variety of disciplines, as in biology, they have  
11 zoology or microbiology, genetics, things like that that  
12 biologists might focus on. Analytics is what I chose to focus  
13 on in computing. So I have courses in computability and  
14 complexity, algorithm design and analysis, data mining, machine  
15 learning, things like that, where we take the tools of  
16 computing and actually apply them to particular data sets.

17 Q. And in the specialization of bioinformatics, what is the  
18 level of experience that you have with the cross-section  
19 between computer science and forensics?

20 A. So I have done a number of studies and projects on  
21 biological data sets. Some of those involving forensic DNA,  
22 both in my studies at the university as well as my everyday  
23 work experience at forensic bioinformatics.

24 Q. We are going to get to that in a second.

25 Were you a part of any undergraduate associations?

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1 A. I am -- I was a member and I still am a member of the  
2 Bioinformatics Research Group at the university. It's a  
3 research group run by two of the computer science professors  
4 who have their students tackle biological problems.

5 Q. What type of projects have you done with the research  
6 group?

7 A. With the research group, I spent a fair amount of time  
8 working on molecular evolution projects. That's the comparison  
9 of DNA between organisms that diverged at different points in  
10 their evolutionary history.

11 Q. As part of your undergraduate experience, did you have any  
12 experience with statistics?

13 A. Yes. I took a course specifically in statistics. I have  
14 also taken undergraduate courses in data mining, which is the  
15 application of particular statistical tools to try to suss out  
16 patterns in data.

17 Q. With regards to your master's degree program, how far along  
18 are you with your master's?

19 A. I have completed the necessary course work, and the credit  
20 requirement, but I have to submit and defend my thesis.

21 Q. What's your thesis on? What's the subject?

22 A. The subject is -- I believe Dr. Shapiro touched on this  
23 yesterday -- the maximum allele count, method of identifying  
24 the number of contributors, the minimum number of contributors  
25 in a mixture. I am simulating and then evaluating the minimum

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1 number of contributors in a variety of different mixtures. I  
2 believe the 2007 John Buckleton paper that was touched on  
3 yesterday is a good description of what I am doing, except I am  
4 importing that experience to a new data set.

5 Q. What is your master's degree going to be in?

6 A. It will be in computer science.

7 Q. With regards to that, to your master's thesis, what type of  
8 research and/or studies have you done?

9 A. I had to source my data somewhere, and the -- my data was  
10 sourced from the NIST open data set. It is a collection of  
11 about a thousand profiles, DNA profiles that have been  
12 accomplished online at a variety of loci; the allele  
13 frequencies that are derived from those genotypes for the  
14 different populations in the United States; and I had to do the  
15 research into the work that has already been done by people,  
16 like my boss and several of his colleagues at the university,  
17 who published one of the early papers on the subject in 2005,  
18 the John Buckleton paper. There was -- Hinda Haned was  
19 mentioned yesterday, she has done some work on assessing the  
20 number of contributors to a mixture. So I have read those  
21 specific papers in addition to the surrounding literature, and  
22 of course had a number of conversations with my advisors and  
23 group.

24 Q. Are you employed?

25 A. Yes.

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1 Q. By whom?

2 A. Forensic Bioinformatic Services.

3 Q. What is Forensic Bioinformatic Services in the business  
4 of?

5 A. If it's easier to say FBS, it is what we call it.

6 Q. Okay.

7 A. We do forensic DNA consulting and reviews of testing that's  
8 already been conducted.

9 Q. What do you do there?

10 A. My title is systems engineer, but I have different duties  
11 depending on what the particular case in question is. I will  
12 review the electronic data generated by the capillary  
13 electrophoresis machine, so these are files that are exported  
14 from the machine, and we use the same software that the  
15 laboratory uses. In the case of OCME, they use the GeneMapper  
16 software program today. So we will use that program to  
17 reanalyze the data, to see what peaks are present, and there  
18 was some conversation about that yesterday. So we have those  
19 capabilities that can be called on, if necessary. We will  
20 prepare a supplemental table of alleles that we typically find  
21 easier to explain and have conversations with the lawyers who  
22 hire us to have conversations over these prepared tables. They  
23 are visually more pleasing, I believe, than a lot of what the  
24 laboratories produce. We will review laboratory protocols, any  
25 relevant literature in the forensic DNA field. Depending on



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1 what issues are at hand, from case to case, it can widely vary.  
2 One case can be number of contributors, one can be touch and  
3 transfer issues. Some of them, well, increasingly, there are  
4 issues about probabilistic genotyping interpretations or the  
5 models and methods used to construct these probabilistic  
6 genotyping systems. So it really depends on the case, but  
7 those are some major points of my duties.

8 Q. Who else works at FBS?

9 A. We have -- I am a full-time employee there. We have one  
10 other full-time employee. She is a biologist, Carrie. And  
11 Dr. Krane is a -- the president of our company. His job is  
12 professor of biology at Wright State. We have other people who  
13 tend to be the big picture folks who are the shareholders of  
14 our company. So we will call them in when we have kind of  
15 guiding issues that we need to address, if we go in a different  
16 direction as a company or if we have particular technical  
17 questions that we need to call on them. We have a variety of  
18 other part-time employees as well, both kind of managerial and  
19 administrative, as well as other technical workers.

20 Q. With regards to the non-full-time employees, the  
21 consultants, what types of areas of expertise are they  
22 affiliated with?

23 A. We have a couple of our co-owners, our cofounders are  
24 those -- the head of the Bioinformatics Research Group that I  
25 am a member of, Dr. Raymer and Dr. Doom, they are professors of

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1 computer science and engineering at Wright State. There is a  
2 professor, and I apologize for butchering this, in criminology  
3 and social behaviors. I'm sorry. He is a Ph.D/J.D. at U.C.  
4 Irvine. Dr. Bill Thompson, Dr. Simon Ford, as well, who is  
5 another independent expert who does reviews of forensic DNA  
6 cases. We have recently brought on, in the past six months or  
7 so, we have researcher who is a Ph.D in biology, as well, who  
8 works at Notre Dame for his primary job, but he has been  
9 consulting and working with us as well.

10 Q. How long have you worked at FBS?

11 A. About five years now.

12 Q. How did you come about working for FBS?

13 A. I took some courses in bioinformatics as -- for my  
14 specialization in bioinformatics. The course is a year-long  
15 course, two semesters, so the first course was co-taught by  
16 Dr. Raymer and Dr. Krane, so a computer science professor and a  
17 biology professor.

18 THE WITNESS: May I adjust the microphone?

19 THE COURT: Make yourself comfortable. You can adjust  
20 it as you see fit. The only thing, obviously, is we just want  
21 to make sure that the court reporter is able to hear everything  
22 you say.

23 (Pause)

24 A. So Dr. Krane and Dr. Raymer taught this course and  
25 described a little bit of what they did at FBS. I thought that

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1 sounded interesting. They announced that if anybody was  
2 interested in an internship, they talk to them. I ultimately  
3 talked to them, I showed up, and I am here five years later.

4 Q. I don't know if I heard you, but what is your particular  
5 title as FBS?

6 A. It's a systems engineer.

7 Q. Now, who are your usual clients at FBS?

8 A. We have a number of clients around the world. They are  
9 typically defense lawyers, solicitors.

10 Q. So what would they be hiring you for?

11 A. We don't have testing capabilities at my office. We are  
12 exclusively reviews. So this is work that's been done by  
13 either public labs or typically private labs at the behest of  
14 prosecutors, police departments. Whoever is requesting this  
15 testing be done, the testing is done, the results are delivered  
16 to us, we review them.

17 Q. With regards to your work experience, we spoke about your  
18 educational experience, but with regards to your work  
19 experience, what level of experience do you have with  
20 statistics?

21 A. Statistics are a part of every DNA case that's brought to  
22 us. It's my understanding the case law is pretty well  
23 established in the U.S. that conclusions aren't reported  
24 without statistics, and of course defense lawyers who are  
25 bringing us cases to review are concerned ultimately about some

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1 conclusion reported.

2 Q. Do you only do reviews of programs that deal with DNA?

3 A. At FBS?

4 Q. At FBS, yes.

5 A. Yes we are exclusively a forensic DNA, forensic biology  
6 company.

7 Q. During your employment at FBS, what has been your  
8 experience with probabilistic genotyping programs?

9 A. In 2014, the switch flipped inside me that got me really  
10 interested in where the field was heading, the field of  
11 forensic DNA mixture interpretation, which has been the primary  
12 focus of probabilistic genotyping. I asked my boss to attend a  
13 conference that I attended with one of our colleagues in I  
14 guess it was a workshop or a seminar in -- outside of St. Louis  
15 that was put on for a week where we were introduced to five  
16 different probabilistic genotyping programs, one per day.

17 Q. What were those five. Sorry. I cut you off.

18 A. Oh, LabRetriever, LRMix, perhaps Forensim -- it's gone  
19 through a number of names -- STRmix, TrueAllele. I think I am  
20 missing the fifth one.

21 Q. That's okay. It wasn't FST, though?

22 A. That was not presented there, no.

23 Q. And, so, what has been your experience at FBS now with your  
24 reviewing of probabilistic genotyping programs?

25 A. Well, at that time, we had seen few cases involving

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1 probabilistic genotyping software. TrueAllele had been out for  
2 a while, and at that time we hadn't been receiving many cases  
3 involving FST for review. Since then, our -- the number of  
4 cases involving FST has grown in addition to the number of  
5 TrueAllele cases that we have reviewed. So there are dozens of  
6 cases across probabilistic genotyping, easily dozens, that we  
7 have reviewed along with that.

8           When we attend conferences or give talks, the topic is  
9 often probabilistic genotyping, especially for me personally.  
10 That's one of my interests due to the computational aspect of  
11 it. So there has been an increasing amount of literature on  
12 the subject as well as the general interest in probabilistic  
13 genotyping has raised throughout the field and has, I believe,  
14 moved from more of a theoretical kind of hypothetical interest  
15 into a very practical interest due to a number of reasons and  
16 changes in the field.

17 Q. Do you work on probabilistic genotyping programs on a daily  
18 basis?

19 A. We certainly review their results. Whether we are actually  
20 running those programs on a daily basis is going to depend on  
21 the week.

22 Q. And how long have you been working on probabilistic  
23 genotyping programs?

24 A. I have been talking about them for quite a while. That  
25 workshop is, in my mind, the milestone of when in earnest I

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1 studies. I don't think those are publicly posted anywhere.

2 Q. Did you review any other organizations' protocols?

3 A. That's a standard process for me to do in any case review,  
4 so I don't have a number off the top of my head, but dozens of  
5 different forensic DNA labs whose testing and analysis,  
6 conclusions who we have reviewed, I have reviewed their  
7 protocols as well.

8 Q. Are you familiar with SWGDAM?

9 A. Yes, it is one of the guidance bodies for forensic DNA  
10 analysis in the United States.

11 Q. Did you review their protocols, validation protocols with  
12 regards to your review of the FST program?

13 A. Yeah, I have been familiar with those since they have come  
14 out.

15 Q. Why is Dr. Krane not here testifying?

16 A. I believe the focus has been on me, as I was the one who  
17 conducted the inspection of the source code in Johnson. My  
18 background is in computing and software development and reviews  
19 of that nature, so I have certainly consulted with him but when  
20 it came down to it, the questions that we were asked to address  
21 are questions that I am answering.

22 Q. And what is Dr. Krane's background again?

23 A. He is a Ph.D in biology. He has studied molecular biology  
24 in population genetics, which is the research he has continued  
25 on at Wright State.

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1 (Counsel confer)

2 MR. ROSANIA: Your Honor, at this time I would offer  
3 Mr. Adams as an expert in computer science and bioinformatics.

4 THE COURT: Let me ask, so the bioinformatics was not  
5 a minor or was it a minor in your studies at Wright State?

6 THE WITNESS: It's a novel field, so that's not  
7 really --

8 THE COURT: I'm sorry? It's a what?

9 THE WITNESS: It's a novel field. It is one of those  
10 things that we would expect it to be a major, maybe in ten or  
11 20 years at, you know, first a couple institutions offer it, so  
12 it is not something that is actually offered. It is something  
13 that needs to be custom crafted if you are interested in  
14 studying that. It was not an official minor.

15 THE COURT: So it is not a degreed area at the school?

16 THE WITNESS: Anywhere to my knowledge.

17 THE COURT: Okay.

18 MR. ROSANIA: Your Honor, can I just ask two more  
19 questions? I think it would help.

20 THE COURT: All right. Let's see.

21 BY MR. ROSANIA:

22 Q. You mentioned that you have to take special classes to get  
23 this bioinformatics specialization. Anywhere on your degree  
24 does it mention the specialization of bioinformatics?

25 A. It's on the transcript.

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1 Q. So it is something that's distinctive --

2 THE COURT: Wait. Wait. When you say it is on your  
3 transcript, it is on your -- the transcript with your grades or  
4 on your -- or -- because counsel mentioned your degree. So in  
5 other words, if you had, like, your degree that's hanging, you  
6 may have hanging somewhere, or maybe not. It is probably, like  
7 mine, may be rolled up somewhere. But is it on your  
8 transcript, in other words, that you would order from the  
9 university that has your grades and other things and it has  
10 bioinformatics or is it on your degree?

11 THE WITNESS: It's on my transcript. I haven't looked  
12 at my diploma since I got it.

13 THE COURT: Is it in English or is it in Latin, your  
14 diploma?

15 THE WITNESS: I don't know.

16 THE COURT: I'm just semi joking because many of them  
17 are not, and I don't read Latin, so some of mine are in Latin.  
18 Go ahead.

19 BY MR. ROSANIA:

20 Q. How many hours have you spent on bioinformatics since your  
21 specialization in undergrad?

22 A. I don't know how to quantify that. The company I work for  
23 is has bioinformatics in its name.

24 Q. So is that hundreds, thousands?

25 A. Yeah.



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1 Q. Every day, correct?

2 A. Yes.

3 THE COURT: Have you ever been qualified as an expert  
4 in bioinformatics?

5 THE WITNESS: I have been qualified as an expert once.  
6 It was in computer science and statistics.

7 THE COURT: At that time were you proffered, in other  
8 words, were you offered up as an expert in bioinformatics.

9 THE WITNESS: No.

10 THE COURT: Okay. All right. Go ahead.

11 BY MR. ROSANIA:

12 Q. Have you ever been denied expert status?

13 A. No.

14 MR. ROSANIA: I will offer him, once again, your  
15 Honor, as an expert in computer science and bioinformatics.

16 MR. McKAY: *Voir dire*, your Honor?

17 THE COURT: Okay. Focused.

18 MR. McKAY: Yes.

19 Mr. DeLuca, can you pull up his résumé again?

20 *VOIR DIRE* EXAMINATION

21 BY MR. McKAY:

22 Q. Can you look at the first page? It doesn't list what year  
23 you graduated from college, does it?

24 THE COURT: I'm sorry, what year?

25 Q. What year you graduated from college.

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1 A. It does not.

2 Q. You did not mention that in your direct testimony.

3 A. No.

4 Q. It's 2014, right?

5 A. Correct.

6 Q. And you do not yet have a master's degree in computer  
7 science, right?

8 A. That's correct.

9 Q. You started that program in 2014?

10 A. Yes.

11 Q. And in September 2016 you testified that you were hoping to  
12 get that degree by the end of that year, didn't you?

13 A. Yeah, that sounds right.

14 Q. You said that bioinformatics is a novel field?

15 A. Yeah, in the scheme of the sciences it is.

16 Q. If you Google bioinformatics, are you aware that you would  
17 find 66 institutions that offer master's degrees in  
18 bioinformatics?

19 A. I was not.

20 Q. You do not have a graduate degree in statistics, right?

21 A. Correct.

22 Q. You do not have a degree in forensics?

23 A. I don't.

24 Q. You have never worked in a forensic DNA lab.

25 A. I have not.

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1 Q. You never handled a piece of evidence and conducted DNA  
2 testing.

3 A. I have not.

4 Q. Your résumé doesn't have a section on publications, right?

5 A. It does not.

6 Q. You have no peer-reviewed publications?

7 A. Not published.

8 Q. The IEEE that you are a member of, that doesn't govern the  
9 forensic DNA community, right?

10 A. It's a professional organization. It does not govern  
11 forensics.

12 Q. And you have testified in court twice before, is that  
13 right?

14 A. That's correct.

15 Q. And the first time in Washington was just a pretrial  
16 hearing, right?

17 A. It was a *Frye* hearing.

18 Q. It was a *Frye* hearing?

19 A. Yes.

20 Q. Are you sure that it was a *Frye* hearing?

21 A. That's my understanding.

22 Q. State v. Fair, in Washington?

23 A. Yes.

24 Q. Your testimony was not about a motion to compel testimony  
25 to compel the source code?

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1 A. Oh, I stand corrected, that's what it was.

2 Q. And you were not qualified as an expert in that case,  
3 right?

4 A. I don't think it came up there.

5 Q. The second time, the time you were qualified as an expert,  
6 that was in Commonwealth v. Dante Washington, right?

7 A. Yes, sir.

8 Q. That was a challenge to TrueAllele, right?

9 A. The case involved TrueAllele, yes.

10 Q. And you testified that you were qualified as an expert in  
11 DNA analysis and computer science?

12 (Pause)

13 Q. Excuse me, computer science and statistics.

14 MR. ROSANIA: Objection.

15 THE COURT: Yeah, I was going to say.

16 Q. Computer science and statistics, right?

17 A. I believe that was the terminology.

18 Q. And you testified that you have never not been qualified as  
19 an expert, right?

20 A. Correct.

21 Q. In fact, the defense lawyer moved for you to be qualified  
22 as an expert in DNA data analysis, didn't he?

23 A. Sounds like something along those lines.

24 Q. And the judge sustained the objection to that, right?

25 A. I don't recall the procedures.

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1 was it. There was what OCME calls performance checks and what  
2 the testimony will show is how the changes in the FST program,  
3 how it modified the interpretation of FST, the program itself.  
4 And I think that's relevant to this hearing.

5 THE COURT: Okay. Well --

6 MR. STRAZZA: May we have one moment, please?

7 THE COURT: Sure.

8 (Counsel confer)

9 MR. ROSANIA: Finally, your Honor, I think -- we have  
10 been here for many days, you know, listening to a lot of  
11 testimony, and I think that this testimony is relevant and I  
12 think it is up to the court itself to determine the weight of  
13 this evidence. This is a hearing. It's not in front of the  
14 jury. We are not --

15 MR. McKAY: Judge, can I just briefly note --

16 THE COURT: It probably says in SWGDAM it's not  
17 retroactive.

18 MR. McKAY: It says, "These guidelines are not  
19 retroactive." So Mr. Adams has reviewed them, but he is not  
20 qualified to opine on them.

21 THE COURT: This is what we are going to do.  
22 Mr. Adams, I will qualify Mr. Adams as an expert in computer  
23 science. With regard to the other testimony, I will hear it;  
24 but, quite frankly, I may reject it in the end of the day as  
25 expert testimony. I think that -- and I don't know, I haven't

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1 gone back to look to determine. Certainly someone who has a  
2 degree in computer science and that has done work subsequently,  
3 I think, you know, can be qualified as an expert. But as I  
4 understand it, with regard to bioinformatics, I am not  
5 qualifying him as an expert in bioinformatics. You know, as I  
6 understand it from the testimony, although Mr. Adams does have  
7 experience in that area, and perhaps could be qualified as  
8 extensive, there is not a degree program or even a minor at the  
9 school he was at with regard to bioinformatics. While he does  
10 have, it sounds, work experience in that area, I don't believe  
11 at this stage his experience is sufficient to qualify him as an  
12 expert in bioinformatics. And, in addition, quite frankly,  
13 while I understand that there may be, at least according to the  
14 government's question -- it is not actually before me, and  
15 questions aren't evidence -- that other -- there may be certain  
16 other universities or colleges that have master's programs in  
17 bioinformatics, I don't know to what extent bioinformatics as a  
18 general matter being something where people have been qualified  
19 as experts.

20 Let me ask, Mr. Rosania, do you know whether any  
21 courts, either federal or state, have qualified individuals in  
22 this area?

23 MR. ROSANIA: I do not. But I know, as Mr. Adams  
24 testified, that in order to get this transcript distinction, he  
25 was required to enroll in certain classes, which he did. But

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1 with regards to whether or not bioinformatics -- someone has  
2 been -- opined as an expert in that, no, I do not know.  
3 However, I would say I think bioinformatics is something that  
4 is evolving over the past 20 years, specifically with the  
5 evolution of these probabilistic genotyping programs.

6 THE COURT: That is part of my point. It is evolving,  
7 and it may be that there is a body of law or findings by courts  
8 that have set parameters with regard to when somebody can be  
9 qualified as an expert or whether or not this is a particular  
10 expertise or whether or not it is really a merging of two  
11 different disciplines where you would have -- if someone  
12 doesn't have the DNA analysis experience and the computer  
13 science experience in one person, where it is something that  
14 sort of goes to my questions about collaborative process. So I  
15 will maintain my ruling. You can ask the questions. But, as I  
16 said, depending upon the nature of the questions and what  
17 Mr. Adams is asked to opine about, I may, in the end of the  
18 day, reject certain portions of the testimony.

19 MR. ROSANIA: Okay.

20 THE COURT: Okay? You can proceed.

21 BY MR. ROSANIA:

22 Q. I would like to first start about your procedure where you  
23 are reviewing a probabilistic genotyping. What is your first  
24 step when you are contracted to review a particular program?

25 A. We like to compile a list of materials that describe the

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1 calculation or assigns a likelihood ratio of one, whichever it  
2 happens to be. Right?

3 A. No, it removes the locus.

4 Q. It does that whether the likelihood ratio generated by that  
5 locus was greater than, or less than, one. Right?

6 A. It is agnostic to the likelihood ratio value of that locus.

7 Q. Okay. Now, you testified a lot about the SWGDAM guidelines  
8 on direct, right?

9 A. Okay.

10 Q. Those were 2015 guidelines?

11 A. Some of them.

12 Q. Well, let's pull up Defense Exhibit A. These are 2015  
13 SWGDAM guidelines that you cited in your testimony, right?

14 A. Yes.

15 Q. If we go to the bottom of that first page, can you read the  
16 sentence that begins "these guidelines." It may be obscured by  
17 the exhibit sticker.

18 A. "These guidelines are."

19 Q. Let's go to the next. You realize that the word "not" is  
20 obscured by the exhibit sticker?

21 A. I'm familiar with the document.

22 Q. It says "not" beneath that exhibit sticker, right?

23 A. I have no problem accepting that.

24 Q. Okay. So they are not intended to be applied  
25 retroactively, right?



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1 A. Not by the authors' intent, yeah.

2 Q. Ah, I see. But perhaps by your intent, they're intended to  
3 be applied retroactively?

4 A. I don't think science started in 2015.

5 Q. Okay. So you didn't help draft those guidelines, right?

6 A. No.

7 Q. You're not a member of SWGDAM, right?

8 A. I am not.

9 Q. You've never worked in a forensic lab that has to apply the  
10 SWGDAM guidelines, right?

11 A. I have not.

12 THE COURT: Let's say you created some source code  
13 five years ago and there have been guidelines that have come  
14 out in 2016. Are you saying that the source code that you  
15 created, that you believe that it should be subject to the  
16 guidelines that came out later?

17 THE WITNESS: I think this is a conversation that  
18 hasn't been had --

19 THE COURT: Well, I'm asking you.

20 THE WITNESS: -- in the field.

21 THE COURT: But, I'm asking you whether you feel that  
22 that is an appropriate thing to do and whether it's something  
23 that's appropriate, an onus that is appropriate to be placed on  
24 you in the work that you did.

25 THE WITNESS: Again, I think this is a conversation

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1 that our field needs to have. Collaboration between the  
2 scientists, statistician and engineers. If a guideline came  
3 out in -- what was it -- July of 2015, then at a minimum, I  
4 think those standards need to apply to any software in use at  
5 that time and going forward. And I have no idea why it would  
6 not be a good idea to go back on a casework that's already been  
7 done to see if those standards could be met retroactively.

8 THE COURT: Do you understand the implications of what  
9 you just said with regard to not only work that's done in this  
10 area but work across a spectrum of industries that are out  
11 there?

12 THE WITNESS: I do. And I think this comes back to  
13 the conversation about what is the criticality of the system.  
14 This is something that is a standard conversation in software  
15 engineering, that there are software programs that are more  
16 important to get right the first time than others. Things like  
17 airline navigation systems are more important than iPhone  
18 games.

19 THE COURT: Okay. Go ahead.

20 BY MR. McKAY:

21 Q. Just to be clear, the opinion that you just expressed, that  
22 would hold true even if the governing body for the relative  
23 industry in this case, SWGDAM, said these guidelines should not  
24 be retroactive, you'd still have that opinion?

25 A. That the -- good practices in 2015 are not supposed to be